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division correlations. Under such conditions it appears likely that very steady and consistent results will be obtained from mean square contingency."

In the calculation of contingency coefficients the present writer has found that the following procedure saves much time and labor. The value of the independent probability v_{uv} for each compartment of the table is obtained by the use of a Thacher calculating instrument (Keuffel and Esser). With this instrument one can read directly to four or five figures the values of any expression which can be put into the form ax/b, where a and b are constants and x is a variable. Since v_{uv} for any compartment equals $(n_u \cdot m_u)/N$ for that compartment, it is evident that by taking either n_u or m_v as the constant, it will only be necessary to make as many settings of the instrument as there are rows or columns in the table. Having obtained the v_{uv} quantities, the sub-contingencies $(n_{uv} - v_{uv})$ may be written down directly, squared from Barlow's tables, and divided by v_{uv} with an arithmometer or with Zimmermann's or Crelle's multiplication tables. The remainder of the calculations necessary to obtain the mean square contingency and the whole of the calculations for the mean contingency, and their respective coefficients are, of course, easily performed. Proceeding in this way, the calculation of contingency coefficients, even though several experimental groupings are made, has been found to take but comparatively little time.

The noteworthy features of this method of contingency are found in that it, in the first place, broadens and illumines the whole theory of correlation, and in the second place, brings within the range of biometrical investigation a large series of problems to which it has hitherto been impossible to apply exact methods. One can but feel that this memoir, like so many of the others which have preceded it in the series, marks a definite and fundamental step in advance in the steady progress of the science of biometry.

RAYMOND PEARL.

'GLUCINUM' OR 'BERYLLIUM.'

SOME years ago the question of choice between the two names 'glucinum' and 'beryllium' was gone into quite carefully by Professor F. W. Clarke and also by the committee appointed by the American Association on the Spelling and Pronunciation of Chemical Terms, and the conclusion was arrived at that the name 'glucinum' should be used on the ground of priority. In SCIENCE for December 9 Dr. Charles Lathrop Parsons has stated his grounds for preferring the name 'beryllium.' Dr. Parsons is, thanks to his bibliographical work on the element in question, thoroughly informed in its literature, but the arguments adduced by him would seem to lead to a conclusion diametrically opposed to that which he has drawn.

It was obviously the privilege of Vauquelin, the discoverer of the element, or rather its oxid, to name it. This he never did, but contented himself by speaking of it at first as 'la terre du Béril,' that is, the earth in beryl. At the close of Vauquelin's first paper the editors of the *Annales* added a note signed 'Redacteur' in which they propose the name 'glucine.' It was of course well known that Guyton and Fourcroy were the editors. Vauquelin's second paper in the *Annales* was evidently prepared at the same time as the first, or at least before the second was in print. In his third paper, some weeks later, as Dr. Parsons admits, Vauquelin actually adopted the term 'glucine,' prefacing its use with 'on a donné le nom de glucine.' The paper in the *Journal des Mines* was apparently prepared at the same time as the first two papers in the *Annales* and before the appearance of the suggestion of Guyton and Fourcroy, but at its close occurs the note which Dr. Parsons has quoted. In this he states that Guyton and Fourcroy have advised him to call the new earth 'glucine' and while he evidently does not think the name the best that could have been chosen, he clearly acquiesces in the suggestion of the two great authorities and says 'Cette denomination sera assez significante pour aide le mémoire.' Finally, as seen above, in his third paper, he adopts the name. As far as priority goes, the argument in favor of 'beryllium' would seem to be that probably Vauquelin would have given the earth some other name had he ventured to dissent from

Guyton's authority, and it is probable that he would have liked to name it 'beryllia.' All of which may be quite true, but actually he did not do it.

As regards the German use of 'Berylerde' it was merely at first the natural translation of Vauquelin's expression 'la terre du Béril,' which, as we have seen, he used in no denominative sense. If the generally accepted rules of priority have any weight 'glucinum' is the only term to be used for the element.

As regards usage, the case is hardly quite as bad as Dr. Parsons seems to think, since the index to the *Journal of the Chemical Society* (London) for 1903 gives 'Beryllium, see glucinum.' With French, English and Americans using 'glucinum,' we can afford to let the German journals cling to 'beryllium' a little while longer.

Incidentally, what shall we do when the Germans insist on kalzium, kolumbium, karolinum, zerium and zesium, or will it be kæsium?

Jas. Lewis Howe.
Washington and Lee University,
December 12, 1904.

BOTANICAL NOTES.

THE STUDY OF FIBERS.

The book ('The Textile Fibers, their Physical, Microscopical and Chemical Properties') prepared by Dr. J. M. Mathews, and recently published by John Wiley, should make the study of textile fibers somewhat easier by students and practical operators. It covers nearly three hundred pages of neatly printed text, illustrated by sixty-nine cuts, in which the author has presented the whole matter in a most helpful way. There is first a useful classification of fibers, followed by descriptions and discussions of those which enter into fabrics. Some of these fibers are, of course, of animal origin, as wool, hair and silk, and to these are given about ninety pages. The remainder of the book is devoted almost wholly to plant fibers, and here the treatment is especially clear and helpful. The origin, varieties, physical and chemical properties of cotton, and mercerized cotton, are discussed in as many chapters. Linen is given another chapter, while jute, ramie, hemp and several other fibers of minor importance are disposed of in another chapter. An interesting chapter for the general reader is the one on artificial silks, the processes for the production of which 'have been attended with a considerable degree of success.' It is said that artificial silk 'has become a commercial article, and is used in considerable quantity by the textile trade.' Of these artificial silks there are four general kinds, viz:

1. Pyrozylin silks, made from a solution of gun cotton in a mixture of alcohol and ether.
2. Fibers made from a solution of cellulose in ammoniacal copper oxide or chloride of zinc.
3. Viscose silk, made from a solution of cellulose thiocarbonate.
4. Gelatin silk, made from filaments of gelatin rendered insoluble by treatment with formaldehyde.

Most of the artificial silk is of the first variety, the manufacture of which is carried on in England, Germany, France and Switzerland. "The fibers are formed by forcing the ether-alcohol solution of pyroxylin through glass capillary tubes, and winding them on frames. As the solution is very viscous it requires a pressure of forty-five atmospheres to discharge it through the capillary openings."

A STUDY OF COMPARATIVE EMBRYOLOGY.

The comparative embryology of the *Cucurbitaceae* (Gourd Family) has been studied by Dr. J. E. Kirkwood, the results of which appear in the *Bulletin of the New York Botanical Garden* (No. 11, 1904). After an instructive historical introduction, the organogeny of representatives of the five tribes (*Fevilleae, Melothrieae, Cucurbiteae, Sicyoideae,* and *Cyclanthereae*) is summarily described, and this is followed by a quite particular examination of the embryo-sac in sixteen genera distributed among the five tribes. Twelve fine plates of 166 figures add much to the value of this portion of the paper. In a closing discussion the author finally concludes that 'in most points the differences between the *Cucurbitaceae,* and other sympetalous families are more striking than the similarities.' The paper closes with a bibli-